

## Sequence Listing

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<110> Seoul National University Industry Foundation

<120> A Novel STAY-GREEN Gene and Method for Preparing Stay-green Transgenic Plants

<130> PP-B0091

<150> KR10-2004-0012026

<151> 2004-02-23

<160> 58

<170> KopatentIn 1.71

<210> 1

<211> 825

<212> DNA

<213> Oryza sativa

<400> 1

atggctgctg ctacttcgac catgtccctg cttcctccca tcacccagca gcagcgggtgg	60
caacgcgcgcg actccctcgt cgtcctcgcc tcccgtgccc acaactctcg ccgcgcgcgc	120
cgctgccgct acgtcgtgcc gagggcgagg ctgttcgggc cggcgatctt cgaggcgtcg	180
aagctgaagg tgctgttcct gggggtggac gaggagaagc accagcaccg ggggaagctg	240
ccgcggacgt acacgtgac gcacagcgac gtgacggcga ggctgacgct ggcggtgtcg	300
cacaccatca accgggcgca gctgcagggg tggtaacaac agctgcagcg ggacgaggtg	360
gtggcggagt ggaagaaggt gcagggccac atgtcgtgac acgtccactg ccacatctcc	420
ggcggccacg tcctcctega cctcctcgcc ggcctccgct actacatctt ccgcaaggag	480
ctccccgtgg ttctgaaggc gttcgtccac ggcgacggca acctgttcag ccggcaccgc	540
gagctggagg aggccacggt gtgggtctac ttccactcca acctcccacg cttcaaccgc	600

## Sequence Listing

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gtcagagtgtc ggggccccgt ccgcgacgcc ggagcgccgc ccgaggaaga cgacgccgtc	660
gccgcgcgcg cggcogagga ggcggcggcg gagcagatgc ccgcggccgg cgagtggccg	720
cggcggtgcc cggggcagtg cgactgtgc ttcccgccat acagcctcat cccctggccg	780
caccagcacg acgtcgccgc cgccgacggc cagccgcagc agtga	825
<div style="display: flex; justify-content: space-between;"> <span>&lt;210&gt; 2</span> <span>&lt;211&gt; 846</span> </div> <div style="display: flex; justify-content: space-between;"> <span>&lt;212&gt; DNA</span> <span>&lt;213&gt; Hordeum vulgare</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>&lt;400&gt; 2</span> </div>	
atggccatcg ccgctgcgc tggcgctcc accatgtccc tgctcccat ctgcacctc	60
aagcagctgc agctgcagcg gcgcgcgcg cccggggcgg tgctcgtgt cgccgcgcg	120
aggcgacacg tcgtgccgag ggcgcggctg ttggtccgg ccattcttca ggcgtccaag	180
ctcaaggctc tgttcgtggg ggtggacgag gagaagcacc cggggaagct gccccggacc	240
tacacgtca cccacagcga cgtgacggcg cggctgacg tggcgtgtc gcacaccatc	300
cacgccgcgc agctgcaggg ctggtacaac cgcctgcagc gggacgaggt ggaggccgag	360
tggaagaagg tgcagggcgc catgtcgtg cactccact gccacatctc cggcgccac	420
ttcctgtctg acctcctcgc gcgctccgc tactacatct tccgaagga gctccccgtg	480
gttctgaagg cgttcgtgca cggcgacggc agcctgttca gccagcacc ggagctggag	540
gaggccacgg tgtgggtcta ctccactcg aacaaccca acttcaaccg cgtcgagtgc	600
tgggggccgc tcagcgacgc cgccgcgcca tacgatgacg aagccgcgt cgactccca	660
gccgccgacg cagccatggc ggccacggcg gtgaacacgg ccgcggacga gcaggcgacg	720
cgcgcgggccc agtggccgcg gcggagcccc gggcagagcg actgctgctt cccgcggag	780

## Sequence Listing

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tgctcatcc cctggccgca cgagcacgag atggccgccc acgcccggcca ggcgcgccc	840
cagtga	846
<div style="display: flex; justify-content: space-between;"> <span>&lt;210&gt; 3</span> </div> <div style="display: flex; justify-content: space-between;"> <span>&lt;211&gt; 798</span> </div> <div style="display: flex; justify-content: space-between;"> <span>&lt;212&gt; DNA</span> </div> <div style="display: flex; justify-content: space-between;"> <span>&lt;213&gt; Triticum aestivum</span> </div>	
<div style="display: flex; justify-content: space-between;"> <span>&lt;400&gt; 3</span> </div>	
atggccaccg cctccaccat gtccctgctc cccatctcgc acctcaagca gctgcagcag	60
cagcggcgca cgcggctcgc cggcgccggc cccgggaagg tgctcgtgct cggccgccc	120
aggcgacacg tcgtgccgag ggcgcggctg ttggcccg ccatcttcga ggcgtccaag	180
ctcaaggctc tgctcgtggg gatggacgag gagaagcacc cgggcaagct gcccgggacc	240
tacacgtca cccacagcga cgtgacggcg cggctgacgc tggcgggtgc gcacaccatc	300
cacgcccgc agctgcaggg ctggtacaac cgcctgcagc gggacgaggt ggtggccgaa	360
tggaagaagg tgcaggcgcg catgtcgtg cacgtccact gccacatctc cggcgccac	420
ttcctgctcg acctcatcgc gccgcttcgc tactacatct tccgcaagga gctccccgtg	480
gttctgaagg cgttcgtgca cggcgacggc agcctgttca gccagcaccg ggagctggag	540
gaggccacgg tgtgggtcta tttccactcc aacaccccaa acttcaaccg cgttcagtgc	600
tgggggccgc tcggaagcc gggggcccta gacaacaaga cggcgacgcg gccgtgccc	660
caaggcgacg cgggggacaa aaaggcaatg gatcgggcag cggcggggg gtcccggggc	720
atggaatggt tttcccgccc gaatcctatc cctggcccaa gaattcaaat gcccaccac	780
cgccaggccc cccaataa	798

## Sequence Listing

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<210> 4  
 <211> 795  
 <212> DNA  
 <213> *Triticum aestivum*

<400> 4  
 atggccaccg cctccaccat gtcctgctc cccatctcg acctcaagca gatgcagcag 60  
 cagcggcgca cgcggctcgc cggcgcgctc cccgggaagg tgctcgtgct cggcgcgcgc 120  
 aggcgccacg tcgtgcgcgc ggcgcggctg tttggtcgg ccatcttcga ggcgtccaag 180  
 ctcaaggctg tgttcgtggg ggtggatgag gagaagcacc cgggcaagct gccgcggacc 240  
 tacacgtca cccacagcga cgtgaaggcg cggtgacgc tggcgggtgc gcacaccatc 300  
 cagccgcgc agctgcaggg ctggtacaac cgcctgcgc gggacgaggt ggtggccgag 360  
 tggaagaagg tgcagggcgc catgtcgtg cacgtccact gccacatctc cggcggccac 420  
 ttctctctcg acctcatcgc gccgctccgc tactacatct tccgcaagga gctccccgtg 480  
 gttctgaagg cgttcgtgca cggcgacggc agcctgttca gccagcaccg ggagctggag 540  
 gaggccaagg tgtgggtcta ctttcactcc aacaacccca acttcaaccg cgtcgagtgc 600  
 tggggccccg tcgcgatgcc gcgcgccta gacgacgaga cggcacgca ctcccaccgg 660  
 cgacgcaccg tgccactgca cgaagacagc cgtcgcgagg gcagtgcccc gggggccccg 720  
 gcattggatg gtgttcgcga aaatgctatc cctggcgagg acccaattgc cgccaaccgc 780  
 cagggccccc aataa 795

<210> 5  
 <211> 846  
 <212> DNA  
 <213> *Zea mays*

## Sequence Listing

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<400> 5  
 atggccgcgc ccgtttctac catgtccctg ctcccgatct cccagcccag gaagcagcag 60  
 cagcaaggcg cgggcgcctg ggtcgtgttc cagcggcggc cctgggacgc gcggcgagg 120  
 cgatacgtcg tcccgcggc gaggtgttc gggccggcga tcttcgaggc gtccaagctg 180  
 aaggtgctgt tcttgggcgt ggacgagggg agcagcaagc atctgcatgc gcaccaccgc 240  
 gcgcgggcgc cgctgtgtcc gcggacgtac acgtgacgc acagcgacgt gacggccagc 300  
 ctgacgtcg ccgtctccca caccatcaac cgcgcgcagc tgcagggtg gtacaaccgc 360  
 ctgcagcgcg acgaggtggt ggcgagtg gagaaggtgc gcggccggat gtgctgcac 420  
 gtgcactgcc acatctccg cggaacttg ctctggacc tcatcgccgg cctccgtac 480  
 tacatcttcc gcaaggagct ccccggtgtg ctcgaggcgt tcgtgcacgg cgacggcgac 540  
 ctgttcagcc gtcaccgga gctggaggaa gccacggtgt gggcttactt ccactccaac 600  
 ctggcccgct tcaaccgct cgagtgtgg ggtccgtcc gcgacgccgc cgcgccgcg 660  
 cccgcgagg acgactccac cgcgcggcc gccgcttcca tcgccatgga gggccagatg 720  
 cccgtgggcg agtggccgca ccggtgtccc cagcagtgcg actgctgctt cccgccgcac 780  
 agcctcatac cctggccgaa cgagcaagac atggccgccg ccgcccggca ggtccgacag 840  
 cagtag 845

<210> 6  
 <211> 825  
 <212> DNA  
 <213> Zea mays

<400> 6  
 atggccgcag ccaccgcgc cgcttcacc atgtegtgc tcccgatctc ccagtcagg 60

## Sequence Listing

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cagcagcacg gcgcggggcg catgaggcgg cggccctggg tcgcgcggcg gaggcgatac	120
gtcgttccga cggcgaggct gttcggggcg gcgatchtcg aggcgtcgaa gctgaagggtg	180
ctgttcctgg gcgtggacga cgaggcgggc agcaagcagc acggggccgct gccgcggacg	240
tacacgctga cgcacagcga cgtgacggcc aggctgacgc tcgcgctctc gcacaccatc	300
aaccgcgcgc agctgcaggg ctggtacaac cgctgcagc gcgacgaggt ggtggccgag	360
tggaagaagg tcgcggggcg gatgtogctg cacgtgcact gccacatctc cggcgggccac	420
ttcctgctcg acctcatcgc gggcctccgc tacgtcatct tccgcaagga gctccccgtg	480
gtgctcaagg cgttcgtgca cggcgacggc gacctgttca gccggcaccg ggagctggag	540
gaggccacgg tgtgggtcta ctccactcc aacctggctc gtttcaaccg cgtggagtgc	600
tggggtcgcg tcgcgcagc cgcgcgccc gccgaggacg actccaccgc gccgcccagc	660
gcctccaact ccaaggaggg cggccagatg atggccatgt gcgagtggcc gcaccgggtg	720
ccccagcagt gcggctgctg ctccccgcg cacagcctca tcccctggcc gaacgagcac	780
gacatggcgg ccgcagatgc ctccggctcc gcccaacagc agtag	825

&lt;210&gt; 7

&lt;211&gt; 801

&lt;212&gt; DNA

&lt;213&gt; Sorghum bicolor

&lt;400&gt; 7

atggccgcag ccaactgccg cgcgcgttct accatgtccc tgccccgat ctcccagctc	60
aggcagcagc agcacggcgc gggcgccgtg gtcgtgttcc ggccggcggc ccgggacgcg	120
cggcgagggc gatacgtcgt gccgacggcg aggctgttcg ggccggcgat ctccgaggcg	180

## Sequence Listing

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tccaagctga aggtgctgtt cctgggcgtg gacgaggaga gcaacaacaa gcacgggcac	240
cgaagacgc cgtgcgcgac ttccccgccg ctgcgcgtac tgccgcggac gtacacgtg	300
acgcacagcg acgtgacggc cagcctgacg ctggccgtgt cccacaccat caaccgcgcg	360
cagctgcaag ggtggtacaa ccgcctgcag cgggacgagg tggtaggcga gtggaagaag	420
gtgcgcgggc ggatgtcgct gcacgtgctc aaggttttcg tgcacggcga cggcgacctg	480
ttcagccggc acccggagct ggaggatgcc ccggtgtggg tctacttcca ctccaacctg	540
accgccttca accgcgtcga gtgtgggggt ccgctgcgcg acgccgccgc gccgcgggcc	600
gaggacgact ccaccgcgc gccgccgcc tccaacaagg atgggcagat gccgcccgtg	660
ggcgagtggc cgtaccggtg tccccagcag tgcgactgct gcttccgcgc gcacagcctc	720
atccccctggc cgaacgagcg cgacatggcg gccgccgccg ccgatgcctc ctccgcgcgc	780
ggccaggccc aacagcagta g	801

<210> 8  
 <211> 786  
 <212> DNA  
 <213> Glycine max

<400> 8 atgtgtactc tcacaactgt tcctgtgctc ccttctaagc ttaacaagcc ttcgttttct	60
cgcaccaca attctctttt tccctactgt ggaagacggg tcgggaagaa gaacaaagca	120
atggttctctg ttgcaagggt gttagggcca gccatatttg aagcctcaaa actgaagggt	180
ttgttcttag gagtggacga aaataagcac ccaggaaatc tccaaggac ttatacgcta	240
acccatagtg atataaccgc taagctcacc ttggcaatct ctcaaaccat aaataattct	300
cagctgcagg ggtggtacaa cagatttcaa agggacgaag tggtaggcaca gtggaaaaag	360

## Sequence Listing

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gtgaagggaa ggatgtctct gcacgttcac tgccacatta gtggagggtca ttttctcttg	420
gatatattag caagggttaag atacttcac ttctgcaagg agctaccagt ggtggtgaag	480
gccgtcgttc acggcgatga aaacctattc aacagctacc cagaattgca agatgccttg	540
gtttgggtct actttcactc aaacattcca gaattcaaca aggtggaatg ttggggccca	600
ctgaaggaag cgtcagcacc cacagggtgg gtccaggagg aggggttggc aattccacag	660
ccatgccaaag aagaatgcc atgttgcttt ccacgctta cgttgagccc tattcagtgg	720
tctaaacaag tccccagcgc ccattacgaa ccttgtgatg ggattgggac ccaacaaaat	780
ctataa	786

<210> 9  
 <211> 816  
 <212> DNA  
 <213> Glycine max

<400> 9 atgggtactc taacaactgt tcctgtgctc cttctaaagc ttaacaagcc ttcgctttct	60
ccgcgtcaca attctctttt tccctactac ggaagacgcg tcgggaagaa gaacaaagca	120
atgggtcctg ttgctagggt gtctggggcca gccatatttg aagcctcaa gcttaagggt	180
ttattcttag gagtggacga aaataaacac ccaggaaatc tccaaggac ttatactcta	240
acccatagt atataaccgc taagctcacc ttggcaatct ctcaaaccat aaataattct	300
cagttacagg ggtggtacaa cagattgcaa agggacgaag tgggtggcaca gtggaagaag	360
gtgaagggaa agatgtctct gcacgtacac tgccacatca gtgggtgtca ttttctctta	420
gatatattag caagggtacg atacttcac ttctgcaagg agctaccagt ggtggtgaag	480



## Sequence Listing

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gCGgtggttc acggcgacga aaacctattc aacaactacc cagaattgca agatgccttg      540
gtttgggttt actttcactc aaacattcca gaattcaaca aggtggaatg ttggggccca      600
ctgaaggaag cgtcagcacc aataggtggg gccaaaggaag agagtgaagca agaaactcct      660
ctaagtaagg agggcttggc aattccacag ccatgccaaag aggaatgcga atgttgcttt      720
ccaccgctga cgtaagccc aattcagtgg tctcaacaag ttcccagcca ccattacgaa      780
ccttgtgatg ggattgagac ccaacaaagt ctataa      816

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<210>      10
<211>      825
<212>      DNA
<213>      Vitis vinifera

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<400>      10
atggctactt tgactgtgc tcttgtgctt ccgtctgagc tcaaaccttc tttctctcaa      60
caccaaagtt ctctcttcgt ttgtcgaaga agaccaaaga agagtaacct tgcttttcct      120
gccgcaaggc tgtttggtcc tgcaattttc gaagcttcaa agcttaaggt tctgtttttg      180
ggagtggatg agaagaagca cccagggaag cttcctagaa cttacacgct tacgcatagt      240
gacataacat ctaaacctac tctggctata tctcaaaacta taaacaactc tcagttgcag      300
gggtggtcca acagattaca aagagatgag gtggtggcac aatggaagaa agtgaaagac      360
cagatgtctc tgcattgtga ctgccacata agtggaggcc atttccttct agatttgtgc      420
gctaaactta gatacttcat cttctgcaaa gagcttccag tggttttgaa ggcttttgtt      480
catggagatg gcaacctgct caacaattac ccagaattac aggaagcttt ggtttgggtt      540
tactttcact cgaacctccc agaattcaat agagtagaat gctggggggc gctcaataat      600
gcagcggcgc ctctctctcc tgccgccggt ggtggcggtg gtagggtgga ggcacaccag      660

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## Sequence Listing

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gacatgaggc aggtggaacc atcaagcaaa tgggagaggc cggaagagcc atgcatggag 720  
 aactgtacat gttgcttccc accaatgagc ctcattcccat ggtcacaaga tctcgcccat 780  
 gaaaatattc atgataccca aaagggatta cagcagcaaa cctga 825

<210> 11

<211> 843

<212> DNA

<213> *Lactuca sativa*

<400> 11

atggcttctc tgatccttcc cacaagcaa aaccctccat cgtcttcgtt tctgcatcaa 60  
 aatcatcaaa acaatccgtt ttttactaac aaaagacgaa agctcaagag gaatcaagcc 120  
 ctagttcccg ttgcaagatt atttgggcct tcgatctttg aagcttcaaa gttgaaggtt 180  
 ttgtttctag gaggtagcga gaagaagcat cctggaaaac ttccaagaac atatacactt 240  
 acacatagtg atatcacgtc taaattgact ctggcaatct ctcaaactat caataattct 300  
 cagttgcagg gttggtataa ccaattatac agagatgaag tggtagcaga gtggagaaaa 360  
 gtgaaagggg atatgtctct tcatgttcat tgcacataa gtcgtggcca tttcttctt 420  
 gatttgtgtg ctgactcag gttcttcac ttcaccaaag aactccctct ggtgttgaag 480  
 gcatttgctc atggagatgg gaatttgcta aacagctacc cggagttgca ggaagcttcg 540  
 gtttgggttt actttcactc aaacattcaa gaattcaata gggttgaatg ttgggggcca 600  
 ctcagagaag cagtgggacc cttatccacc accacttcat catcatcatc atcatcatta 660  
 tctgaatcca ccattgctga agctggagaa ggatcaaaca attgggagat cccaaagcca 720  
 tgtctagaag catgtgcatg ttgctttcca ccgatgagtt caatcccatg gtcacatgat 780

## Sequence Listing

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cttgtgaaga atcaagacga tgatgatggt gccacccacc aagggttgca acaaaaagct      840

tga                                                                           843

<210>      12
<211>      873
<212>      DNA
<213>      Pinus taeda

<400>      12
atggcggtgg caagaatctc tgcaggaaaa acacagcact gctactcctt ctcccatct      60

gatgtacgga ttctgtctgc accacagaat tcacagtctc agttcaaaag gaaatcgaag      120

ataaagcttt cctccagggt tctggccagc gagagcagct ggaatggcct ggtcgcgcac      180

cagttacagt gcaataacag acatcgaact aatagcagct tccccgatc caccagtcgt      240

gtgggtggcg gattgtttgg gcctgcaatc ttccaggcat cgaagctcaa ggttctatct      300

cttggaacac atgaagagaa acatcctgcg catcttccca ggacttatac gtcacacac      360

agcgacatca cggccaaatt aacgctggct ttttctcaa caatcaataa agatcaggga      420

tggtataaca ggttacagag agacgaagtt cttgcgcagt ggaagaaatc tcagggcaaa      480

atgtctctgc acgttcactg tcacatcagc ggaggctact ggctcctgga cgccattgct      540

agacttagat ttacatctt cgcgaaggaa ctgccggtgg tgctggaggc gttcagacat      600

ggggaccggg ctctgcttga gaagcaccca gagctggaga ccgcactggt ttgggtgtat      660

tttcattcca atgtcaaaga attcaaacgt gtggaatgtt gggggtcttt ggctgaagca      720

tgcaagggtg cacctagcaa tttgaacaag gaattggacg agctcgatgg tggaaaattg      780

gagatgccta gtcattgcgc agaaccatgt agttgttgot ttctccctt tagtgttctt      840

ctacgaccag aagatgttga acaatttagc taa                                     873

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## Sequence Listing

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<210> 13  
 <211> 816  
 <212> DNA  
 <213> Citrus sinensis

<400> 13  
 atggctagtt tggttgctgc tcttgggctt cctcaaagc tcaaagcttc cccctatgag 60  
 cagcaaaacg cactctttgt ttctagaaga agatccaaga aaaagaacca atcttttctg 120  
 cctgtggcaa gattattcgg accagccatt tttgaagctt caaagctgaa ggtattgttt 180  
 ttgggggtgg atgaagagaa gcatccaggg aagctgcaa ggacttatac acttaccat 240  
 agtgatataa cctctaagct tacttttagct atttctcaa ccataaataa ttctcagctg 300  
 cagggatggt acaacagggt gcaaagggat gaggttgtgg cagagtggaa gaaggtaaag 360  
 ggaaagatgt ctcttcattg tcaactgtcac ataagtggag gccatttctt attagacatt 420  
 tgtgctagac ttagattctt catcttctcc aaggaactcc ccgtggttct gaaggcattt 480  
 gttcatggag atggcaattt gttaaacaat cacccggaat tacaggaggc tttggtttgg 540  
 gtctattttc attccaatat tcctgaattc aataaagtcg aatgctgggg tccactcaa 600  
 gaggcagttg ccggatcgag tgaagctggc gggacccgcc acgagattag gcaagaaact 660  
 tcaataagca actgggaatt accagaacct tgcaggaaa cgtgcaactg ttgctttcct 720  
 ccaatgagct tgatcccggt gtcagagaag cttccccttc aaaccgaaaa tcgtgggacc 780  
 cagggccaag aaagcttaca gcaacaaacc cgatga 816

<210> 14  
 <211> 792  
 <212> DNA

## Sequence Listing

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<213>     *Medicago truncatula*

<400>     14

atgggtactc taaccaccgc tcctcctcct atgctcactt ctaagttcaa accttccttt	60
tcacctcaac ataaacctct ttttccaaat agaagacggt tatggaagaa gaaccaatca	120
attgttcctg ttgetaggtt atttggaaccg gctatatattg aagcatcaaa attgaaggtt	180
ttgttcttag gaattgatga agacaaacat ccaggaaatc ttccaaggac ttatacgta	240
acacatagtg atgtaacctc aaaactcact ttggcaattt ctcaaaccat taataactct	300
cagttgcagg gatggtataa tagattgcaa agggatgaag ttgtggcgca gtggaagaag	360
gtgaagggaag agatgtctct ccatgttcat tgtcatatta gtggtggcca tttttgtta	420
gatatatattg ctagactaag atatttcac tcttgcaaag agttaccctg ggtattgaag	480
gcttttgtac acggtgacgg caatttatc aacaactatc cggaattaca ggaagcattg	540
gtttgggtat attttcattc aaagattcca gaattcaaca aggtagaatg ttgggtcca	600
ctaaaggagg cttcacaacc tactagtggg acccaaagg accaccaaaa ttgacccta	660
cctgagccat gtcaagaaac ttgcgagtgc tgctttccac cgttgaagtt gagcccaatg	720
ccgtgtctcta atgaggttca caatgatact tatgaaccta ttgatggaat tgaaactcaa	780
caatcactgt aa	792

<210>     15

<211>     819

<212>     DNA

<213>     *Solanum tuberosum*

<400>     15

atgggaactt tgactgcttc tctagtgggt ccatctaagc tcaacaatga aaaacagagc	60
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## Sequence Listing

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tctatTTTTg tacacaaaac tagaagaaaa tccaagaaga atcaatccat agtacctgtg	120
gcaagggttat ttggggccagc tatatttgaa gcttcaaagt tgaagggtact ttttttggga	180
gttgatgagg aaaagcatcc aggaaagttg ccaagaacat atacactgac tcatagtgat	240
attacttcta aacttacttt ggctatctct caaaccatca ataactctca gttgcaaggt	300
tggtataata gacttcaaag agatgaagtt gttgcagaat ggaagaaagt taaaggggaag	360
atgtcacttc atgtccattg ccacataagt ggaggccatt ttatgttaga cttatttgct	420
agactcagaa actatatctt ctgcaaagaa ctccctgtgg ttctgaaggc ttttgttcat	480
ggagatgaga atttattaaa gaataatcca gagttacaag aagctttagt ttgggtatat	540
tttcattcaa acattcaaga attcaacaaa gtagaatgtt ggggtccact caaagatgca	600
acctccccct catctctctt tagtggggta ggtggggta agagtacaag ttttacaagc	660
aatagtaaca acaagtggga gttacaaaaa ccttgtgaag aggcttgtgc atgttgcttt	720
cccccaatga gtgttatgcc ttggccttct tcaaactctg atgggatagg tgaggaaaat	780
gggaccatcc aacaaggctt gcaagagcag caaagttga	819

&lt;210&gt; 16

&lt;211&gt; 810

&lt;212&gt; DNA

<213> *Populus tremula*

&lt;400&gt; 16

atgggctctc tggcaattgc tccctttctt ccttcaaagc taagaccctc tatacttgat	60
caaaatagct ctctctttcc ttcaaagaaa aaactcaaga ggaagaacca atctatcagt	120
cctgtggcaa ggttatttgg gccatctatt tttgaggcat caaaactgaa ggtgttgttt	180
ttaggggttg atgagaagaa acatccaggg aatctgccaa ggacttatac actaacacat	240

## Sequence Listing

---

```

agtgatatta cagctaaact tacttttagcc atctcacaaa ccatcaacaa ttctcagttg      300
cagggatggt ccaacaaatt gtacagagat gaagtgggtg cagagtggaa gaaagtaaag      360
ggaagatgt ctctccatgt tcaactgccat ataagtggag gccatTTTTct cctagattta      420
tgttgtagac ttagatattt catcttccgc aaagaacttc ctgtggtatt gaaggccttc      480
tttcatggag atgggaattt gtttagcagc tatcctgaat tgcaggaggc ttagtttgg      540
gtttactttc attccaacat tccagaattc aacaaggtag agtgctgggg tccactcaag      600
catgccgcag caccttatac tgctgcatct ggcggggccc ctgagaacaa ggagcaagca      660
accgactgga acttgctga gccatgccaa gagaactgtc agtggtgctt tccaccaatg      720
agcttgatcc catggtccga aatggttccc caagagaaca agaataatcc aagcaccag      780
cagacctttc aacaagctca acaaccctaa      810

```

```

<210>      17
<211>      813
<212>      DNA
<213>      Populus tremula

```

```

<400>      17
atgggttctt tggcagttgc tccctttctt ccctcaaagc caagaccctc tctctttgat      60
caacacagct ccctcttttc tccaagtaca aagctcaaga ggaagaacca atctatcagc      120
cctgtggcaa ggttatattg gccatctatt tttagggcat caaagctgaa ggtgctgttc      180
ttaggggttg atgagaagga gcatccaggg aatctgcaa ggacttatac tctaacacac      240
agtgatatga cagctaagct tacttttagcc atctcacaga ccataaacia ttctcagttg      300
cagggatggt ccaacaaatt gtaccgagat gaagtgggtg cagagtggaa gaaagtaaag      360

```

## Sequence Listing

---

```

ggaagatgt ctctcatgt tcattgcat ataagtggag gccattttct tttagattgg      420
tgctgcagac tcagatatct catcttcgc agagaactcc ctgtggtatt gaaggccttt      480
tttcatggcg atgggagctt gttgagcaac tatcctgaat tacaggaggg tttagtttgg      540
gtttactttc attcaaacat tccggaattc agcaaggctc agtgctgggg tccactcaag      600
gatgctgctg cgccttctac ttctgaaact ggtgggtcca atgagaccga ggagctagca      660
aaccaatcaa gcaactggga cttgcccgag ccattgccaag aggagaattg tagctgttgc      720
tttccaccaa tgagcttgat cccatggtct aaaatgggtc cgttgaggga caaaaataat      780
ccaagcacc caccagacct tcaacagccc taa                                  813

```

```

<210>      18
<211>      861
<212>      DNA
<213>      Mesembryanthemum crystallinum

```

```

<400>      18
atgggcactt tgactgcctc tatgttgctc ccatcaaagc tcaaaccttc agtctttgaa      60
gatcaatcct ctgtttatct taaaagatca tgcagaggac ttcccaagct caacaaggcc      120
aaatcttttt cacctgtgat gagattgttt gggccagcaa tatttgaaag atcaaagttg      180
aagggtgtgt tcttgggagt ggataaagag aagcaccag ggaagttgcc tagaacttat      240
actcttactc atagtgatat cacttccaag ctcaacttgg ccatctctca aactattaac      300
aattcccagt tacaagggtg gtacaaccaa ctacagagag atgaagtggg ggcagaatgg      360
aagaaagtga aagggaagat gtcactccat gttcattgtc acataagtgg tggccatata      420
ctcttagact tatttgctaa gcttagattc tacatctttt gcaaggaaact ccctgtggta      480
ttgaaggcat ttgtgcatgg ggatgagaat ttgttcaaca actaccaga actacaagag      540

```



## Sequence Listing

---

gcaatggtgt ggggtatactt ccattcaaac cttgaagaat tcaacaaaat cgagtgtctgg	600
ggcccgcctca aggatgccgt ggcacgcaac tcgaagaaaa acaagaacaa gaacaagata	660
gatttcaagt taagtttcaa agaagaggat gattcaccag ataacgagtt ggagatacca	720
gagacttgca aggaaccttg tacctgttgc ttctctccca ctagtgtcat cccttggctc	780
cattcagcat tgtcacaggg tgatgatctt catctctctg gtgggaccca ccaaggcttg	840
gagcagcagc agcaaacttg a	861

<210> 19  
 <211> 807  
 <212> DNA  
 <213> *Arabidopsis thaliana*

<400> 19 atgtgtagtt tgtcggcgat tatgttgta ccaacgaagc tgaaaccagc ttattcagac	60
aaacggagta acagtagcag cagcagctca ctctcttcca acaatagaag atccaagaag	120
aagaaccaat cgattgttcc cggtgcaagg ttgtttggac cggcgatttt cgaatcatcc	180
aaattgaaag tactcttctt aggggttgat gagaagaagc atccttcaac gctccctagg	240
acttacacac tcactcacag tgacattaca gctaaactaa ccttagctat ttctcaatcc	300
ataaacaact ctcaagtgca aggatgggca aataggctat accgggatga agttgtggca	360
gaatggaaga aagtgaagg gaaaatgtcg cttcacgttc attgtcacat aagcgggtggc	420
catttccttt tagatctctt tgcaaagttt cgatatttca tcttttgcaa agaactacct	480
gtggtgttga aggcctttgt gcatggagat gggaacttgt tgaacaacta tcctgagcta	540
caagaagctc ttgtttgggt ctatttccat tctaattgca atgagttcaa caaagtcgag	600

## Sequence Listing

---

tggtgggggtc cgctttggga agctgtttcg cctgatggtc acaagactga gactcttccc	660
gaggctcggt gtgcggacga gtgtagtgtg tgttttccaa ccgttagctc gattccatgg	720
tctcatagtc ttagtaatga aggtgtaaat ggttactctg ggactcagac tgaggggaatt	780
gctactccaa atccggagaa actctag	807

<210> 20  
 <211> 816  
 <212> DNA  
 <213> Arabidopsis thaliana

<400> 20 atgtgtagtt tggctacaaa tctgttacta ccatcgaaga tgaaaccagt ttttccagag	60
aaactgagca ctagctcact ctgtgtcacc actagaagat ctaagatgaa gaaccgatct	120
attgttctctg ttgcaagatt gtttggaccg gcgatttttg aagcctccaa attgaaagtg	180
ttattottag gaggttgatga gaagaagcat ccagcaaaac ttccaagaac ttacactctt	240
actcacagt acataacgc taaattaact ttagctatat ctcaatccat taataactct	300
cagttgcaag gatgggcaaa taaattgttc cgggacgaag tagtgggcga gtggaagaaa	360
gtgaaaggta aaatgtcgct tcatgttcat tgccacatta gcggaggcca cttcttcttg	420
aatctcatcg cgaagcttcg gtactacatc ttttgcaaag aattacctgt ggtactggaa	480
gcttttgccc atggagatga gtatttgta aataatcacc ccgagctaca agaatctcct	540
gtttgggttt atttccattc caacatcccg gagtacaaca aggtcgaatg ttggggaccg	600
ctttgggagg ccatgtcgca gcaccagcac gacggaagga ccacaagaa gagtgaaact	660
ctaccggagc taccttgccc tgatgagtgc aagtgttgct ttccgacggt tagcacgatt	720
ccgtggcttc atcgctatta tcaacatacc gcagcggatg agaatgttgc ggatggcctg	780

## Sequence Listing

---

ttggaaatac ctaaccctgg gaaatcaaag ggatag

816

<210> 21

<211> 662

<212> DNA

<213> Lycopersicon esculentum

<400> 21

atgggaactt tgactacttc tctagtgggt ccatctaagc tcaacaatga acaacagagc 60

tctattttta tacacaaaac tagaaggaaa tgcaagaaga atcaatccat agtacctgtg 120

gcaagggttat ttggaccagc tatatttgaa gcttcaaaat tgaagggtact ttttttgga 180

gttgatgaag aaaagcatcc aggaaagtgt ccaagaacat atacactgac tcatagtgat 240

attacttcta aacttacttt ggctatctcc caaaccatca ataattctca gttgcaagggt 300

tggtataaca gacttcaaag agatgaagtt gttgcagagt ggaagaaagt aaaaggggaag 360

atgtcacttc atgtccattg ccacattagt ggaggccatt ttatgttaga cttatttgc 420

agactcagaa actacatctt ctgcaaagaa ctccctgtgg ttctcaaggc ttttggtcat 480

ggagatgaga atttactaag gaattatcca gagttacaag aagctttagt ttgggtatat 540

tttcattcaa acattcaaga attcaacaaa gtagaatgtt ggggtccact cagagatgca 600

acttccccct catcttcttc tgggtgggta ggtggggtga agagtacaag ttttacaagc 660

ca 662

<210> 22

<211> 334

<212> DNA

<213> Beta vulgaris

## Sequence Listing

---

<400> 22  
cccgaatta caagaagctt cagtatgggt atacttccat tcaagcattc ctgaatttaa 60  
  
caaagtagag tgctggggcc cattgaccga cgccgtggat ccgccgtcga aaaataagaa 120  
  
gaggatgatg atgataaatg atgagcagga taaagaagaa gaagaagaag caagtagctc 180  
  
aaaatgggag atgttagttc cttgcacgaa accatgtaga tgttgctttc cacctacaag 240  
  
tttgattcct tggactcctt cactatcaca agaacagcaa caagagcaac aacttcctgg 300  
  
agacgtttcg atcccgccac ctgggactcg ctac 334

<210> 23  
<211> 564  
<212> DNA  
<213> Zoysia japonica

<400> 23  
acgtacacgc ttactcacag cgacgtcacg gccaaagctca cgctggcggt ctcccacacc 60  
  
atccacgccg cgcagctgca ggggtggtag aaccgcctgc agcgggacga ggtggtggcc 120  
  
gagtggagga aggtgcgcgg gaacatgtcg ctgcacgtcc actgccacat ctccggcgga 180  
  
caattcctcc ggcacetcac cgcgcgctc cgctactaca tcttcgcaa ggagctcccc 240  
  
gtggttctca aggcgttcgt gcacggcgac ggcagcctgt tcagcagcca cccggagttg 300  
  
gaggaggcca cgggtgtgggt ctacttccac tccaacctgc cccgcttcaa ccgcgtcgag 360  
  
tgctggggtc ctctctgca cgccgcgcg ccgctcgagg aggaggggca gcagaatgac 420  
  
gatcggttgc ccgcgggcga gtggccgcgg cgggtgcccc agcagtgcga gtgctgcttc 480  
  
ccgcgcaca gtctcatccc ctggcccaac gagcacgaca tggctccac cgacgcccc 540  
  
gccgctggcc agacgcagca gtga 564

## Sequence Listing

---

<210> 24  
 <211> 284  
 <212> DNA  
 <213> *Lotus corniculatus* var. *japonicus*

<400> 24  
 actaccaga attgcaggat gcattggttt gggatactt tcaactcaaag attccagagt 60  
 tcaacaaggt acagtgttgg ggaccactga aggaggcggc tgcaccgtca ggtgggtccc 120  
 cggagaaaga aggtgaaggg gtgaagatgc cggatccgtg tccagaagaa tgtgagtgtt 180  
 gctttcctcc tccaccggca ttggatccaa tcccatggtc tgaagaagtt ccctctcccc 240  
 attatgaagc ttttgatggg gttgggaccc gaccaaactt gtag 284

<210> 25  
 <211> 326  
 <212> DNA  
 <213> *Lotus corniculatus* var. *japonicus*

<400> 25  
 tagatctatg tgctaagcta agataactca tcttctgcaa agagcttcca gtggtattga 60  
 aggccttcat tcacggcgat gaaaatttgt tcaacaacta cccggagtgt gaggaatcat 120  
 tggtttgggt ttactttcac tcaaacatct cagaattcaa caagggtggag tgttggggtc 180  
 cacttaagga tgcttgtgca acatcaattg ggtcctactc ctatgacaag ggtatgcctc 240  
 aaactcagcc atgccaacaa aactgcgagt gttgctttac accgatgagc tcaagtgatt 300  
 ggattggaac ccaacaaaaa ttgtga 326

<210> 26  
 <211> 415  
 <212> DNA

## Sequence Listing

---

<213>     *Saccharum officinarum*

<400>     26

cacgaggctc gacctcatcg ccggcctccg ctactacatc ttccgcaagg agctccccgt	60
ggatgctcaag gcgttcgtgc acggcgacgg cgacctgttc agccggcacc cggagctgga	120
ggatgccacg gtgtgggtct acttccactc caacctgacc cgcttcaacc gcgtcgagtgc	180
ctgggggtccg ctccgcgacg ccggcgcgcc gccggccgag gaagactcca ccgcgccggc	240
cgctccaac tccaaggagg ggcagatgcc gccgtgggc gaggggcgt accggtgtcc	300
ccagcagtgc gactgctgct tccccccca cagcctcatc cctggccga acgagcacga	360
catggctgcc gccgccgcg atgccaccgc cgctggccag gcccaacagc agtag	415

<210>     27

<211>     481

<212>     DNA

<213>     *Picea*

<400>     27

aatcaataaa gatcagttgc agggatggta taacaggta cagagagacg aagtgattgc	60
ccagtggaag aaatctcagg gcaaaatgtc tctgcacgtt cactgtcata tcagcggagg	120
tcattggctt ctggacgcca tcgcgagact tagattttac atcttccgca aggaactgcc	180
ggatgggtctg gaggcggtca ggcattggaga tcgggctctg cttgacaagc acccagagct	240
agagaccgct ctgggttggg tgtatttcca ctccaatgtc agagagttca aacgcgtgga	300
gtgttgggggt tctttggctg aggcattgcaa gggtgccctt agcaatttgg agaaggaatt	360
ggacgaggag tttaatggtg aaaaattgga gatgcctagt cattgctcag aacctgcaa	420
ttgttgcttt cctccattta gcgtccttct acgaccagaa gatgctgaac aatttattta	480

## Sequence Listing

---

a 481

<210> 28

<211> 632

<212> DNA

<213> Brassica napus

<400> 28

atgtgtagtt tggcaacaaa tctcttactc ccatcgacga tgaaaccagc ttttacagag	60
aaacagaaca ctaactcact ctttcttaca aataaaagat ccttgatgca gaacagatct	120
actgttctctg ttctgttgc aagattgtta gaaccggcga tttttgaagc ctccaaattg	180
aaagtatcgt tcttaggagt tgatgagaag aagcatccat caaagctccc aagaacttac	240
actcttactc acagtgcacat aacagctaag ttaactttag ctatctccca atctatcaat	300
aattctcagt tgcagggatg ggctaataga ttatttcggg acgaagtagt ggccgagtgg	360
aagaaagtga agggtaaaat gtcctttcac gttcattgcc acattagcgg aggccacttc	420
cttttggatc tcatagcgaa gcttcggtac tacatatattt gcaaggaatt accggtggta	480
ttgaaagctt ttgttcatgg ggatgggaac ttgttgaata gttaccctga gctacaagaa	540
tctcctgttt ggggtttatc cattcaaaca tccccgagta caataagggt gaatgttggg	600
ggccgctttg ggaggccacg cagcacaaac ac	632

<210> 29

<211> 291

<212> DNA

<213> Brassica napus

<400> 29

atgtgtagtt tgtcagcgaa catgttggtta cgcacaaagc tgaaaccagc ttattcagac	60
--	----

## Sequence Listing

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```

aaacggggta atagtacgaa ctcaattctt gtctccaata caagatccaa gaggaagaac      120
caatccgttg ttcctatggc aagattgttt ggaccggcga ttttcgaatc atccaagttg      180
aaagtattgt ttctaggtgt tgatgacaag aagcatccac caacgcttcc aaggacttac      240
actctcactc acagtgcacat tacagctaag ctaactttag ctattttctca c              291

```

```

<210>      30
<211>      274
<212>      PRT
<213>      Oryza sativa

```

```

<400>      30
Met Ala Ala Ala Thr Ser Thr Met Ser Leu Leu Pro Pro Ile Thr Gln
   1               5               10              15

Gln Gln Arg Trp His Ala Ala Asp Ser Leu Val Val Leu Ala Ser Arg
   20               25              30

Cys His Asn Ser Arg Arg Arg Arg Arg Cys Arg Tyr Val Val Pro Arg
   35               40              45

Ala Arg Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val
   50               55              60

Leu Phe Leu Gly Val Asp Glu Glu Lys His Gln His Pro Gly Lys Leu
   65               70              75              80

Pro Arg Thr Tyr Thr Leu Thr His Ser Asp Val Thr Ala Arg Leu Thr
   85               90              95

Leu Ala Val Ser His Thr Ile Asn Arg Ala Gln Leu Gln Gly Trp Tyr
  100              105              110

Asn Lys Leu Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Gln
  115              120              125

Gly His Met Ser Leu His Val His Cys His Ile Ser Gly Gly His Val

```



## Sequence Listing

---

130	135	140	
Leu Leu Asp Leu Ile Ala Gly Leu Arg Tyr Tyr Ile Phe Arg Lys Glu			
145	150	155	160
Leu Pro Val Val Leu Lys Ala Phe Val His Gly Asp Gly Asn Leu Phe			
165	170	175	
Ser Arg His Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His			
180	185	190	
Ser Asn Leu Pro Arg Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Arg			
195	200	205	
Asp Ala Gly Ala Pro Pro Glu Glu Asp Asp Ala Val Ala Ala Ala Ala			
210	215	220	
Ala Glu Glu Ala Ala Ala Glu Gln Met Pro Ala Ala Gly Glu Trp Pro			
225	230	235	240
Arg Arg Cys Pro Gly Gln Cys Asp Cys Cys Phe Pro Pro Tyr Ser Leu			
245	250	255	
Ile Pro Trp Pro His Gln His Asp Val Ala Ala Ala Asp Gly Gln Pro			
260	265	270	
Gln Gln			
<210>	31		
<211>	281		
<212>	PRT		
<213>	Hordeum vulgare		
<400>	31		
Met Ala Ile Ala Ala Ala Ala Gly Ala Ser Thr Met Ser Leu Leu Pro			
1	5	10	15
Ile Ser His Leu Lys Gln Leu Gln Leu Gln Arg Arg Ala Arg Pro Gly			

## Sequence Listing

---

20	25	30
Arg Val Leu Val Leu Gly Arg Arg Arg Arg His Val Val Pro Arg Ala		
35	40	45
Arg Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu		
50	55	60
Phe Val Gly Val Asp Glu Glu Lys His Pro Gly Lys Leu Pro Arg Thr		
65	70	75 80
Tyr Thr Leu Thr His Ser Asp Val Thr Ala Arg Leu Thr Leu Ala Val		
85	90	95
Ser His Thr Ile His Ala Ala Gln Leu Gln Gly Trp Tyr Asn Arg Leu		
100	105	110
Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Gln Gly Ala Met		
115	120	125
Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp		
130	135	140
Leu Ile Ala Pro Leu Arg Tyr Tyr Ile Phe Arg Lys Glu Leu Ser Val		
145	150	155 160
Val Leu Lys Ala Phe Val His Gly Asp Gly Ser Leu Phe Ser Gln His		
165	170	175
Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His Ser Asn Asn		
180	185	190
Pro Asn Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Ser Asp Ala Ala		
195	200	205
Ala Pro Tyr Asp Asp Glu Ala Ala Val Asp Ser Pro Ala Ala Asp Ala		
210	215	220
Ala Met Ala Ala Thr Ala Val Asn Thr Ala Ala Asp Glu Gln Ala Thr		
225	230	235 240

## Sequence Listing

---

Arg Ala Gly Gln Trp Pro Arg Arg Cys Pro Gly Gln Cys Asp Cys Cys  
                   245                  250                  255

Phe Pro Pro Glu Cys Leu Ile Pro Trp Pro His Glu His Glu Met Ala  
                   260                  265                  270

Ala Asp Ala Gly Gln Ala Pro Pro Gln  
                   275                  280

<210> 32  
 <211> 266  
 <212> PRT  
 <213> Triticum aestivum

<400> 32  
 Met Ala Thr Ala Ser Thr Met Ser Leu Leu Pro Ile Ser His Leu Lys  
   1                  5                  10                  15

Gln Met Gln Gln Gln Arg Arg Thr Arg Leu Ala Gly Ala Leu Pro Gly  
                   20                  25                  30

Lys Val Leu Val Leu Gly Arg Arg Arg Arg His Val Val Pro Arg Ala  
                   35                  40                  45

Arg Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu  
                   50                  55                  60

Phe Val Gly Val Asp Glu Glu Lys His Pro Gly Lys Leu Pro Arg Thr  
                   65                  70                  75                  80

Tyr Thr Leu Thr His Ser Asp Val Thr Ala Arg Leu Thr Leu Ala Val  
                   85                  90                  95

Ser His Thr Ile His Ala Ala Gln Leu Gln Gly Trp Tyr Asn Arg Leu  
                   100                  105                  110

Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Gln Gly Ala Met  
                   115                  120                  125

## Sequence Listing

---

Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp  
 130 135 140

Leu Ile Ala Pro Leu Arg Tyr Tyr Ile Phe Arg Lys Glu Leu Pro Val  
 145 150 155 160

Val Leu Lys Ala Phe Val His Gly Asp Gly Ser Leu Phe Ser Gln His  
 165 170 175

Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His Ser Asn Asn  
 180 185 190

Pro Asn Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Arg Glu Ala Ala  
 195 200 205

Ala Pro Tyr Asp Asn Lys Thr Pro Thr Arg Pro Cys Pro Gln Gly Asp  
 210 215 220

Ala Gly Asp Lys Lys Ala Met Asp Arg Ala Ala Pro Arg Gly Ser Arg  
 225 230 235 240

Gly Met Glu Cys Phe Ser Arg Pro Asn Pro Ile Pro Gly Pro Arg Ile  
 245 250 255

Gln Met Pro Pro Pro Arg Gln Ala Pro Gln  
 260 265

<210> 33

<211> 264

<212> PRT

<213> Triticum aestivum

<400> 33

Met Ala Thr Ala Ser Thr Met Ser Leu Leu Pro Ile Ser His Leu Lys  
 1 5 10 15

Gln Met Gln Gln Gln Arg Arg Thr Arg Leu Ala Gly Ala Leu Pro Gly  
 20 25 30

## Sequence Listing

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```

Lys Val Leu Val Leu Gly Arg Arg Arg Arg His Val Val Pro Arg Ala
    35                      40                      45

Arg Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu
    50                      55                      60

Phe Val Gly Val Asp Glu Glu Lys His Pro Gly Lys Leu Pro Arg Thr
    65                      70                      75                      80

Tyr Thr Leu Thr His Ser Asp Val Thr Ala Arg Leu Thr Leu Ala Val
    85                      90                      95

Ser His Thr Ile His Ala Ala Gln Leu Gln Gly Trp Tyr Asn Arg Leu
    100                     105                     110

Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Gln Gly Ala Met
    115                     120                     125

Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp
    130                     135                     140

Leu Ile Ala Pro Leu Arg Tyr Tyr Ile Phe Arg Lys Glu Leu Pro Val
    145                     150                     155                     160

Val Leu Lys Ala Phe Val His Gly Asp Gly Ser Leu Phe Ser Gln His
    165                     170                     175

Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His Ser Asn Asn
    180                     185                     190

Pro Asn Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Ala Met Pro Arg
    195                     200                     205

Ala Leu Asp Asp Glu Thr Pro Arg Asp Ser His Arg Arg Arg Thr Val
    210                     215                     220

Pro Leu His Asp Asp Ser Arg Arg Ala Gly Ser Ala Pro Gly Ala Pro
    225                     230                     235                     240

```

## Sequence Listing

---

Ala Leu Asp Gly Val Pro Gln Asn Ala Ile Pro Gly Ala Asp Pro Ile  
                   245                  250                  255

Ala Ala Asn Arg Gln Gly Pro Gln  
                   260

<210> 34  
 <211> 281  
 <212> PRT  
 <213> Zea mays

<400> 34  
 Met Ala Ala Ala Ala Ser Thr Met Ser Leu Leu Pro Ile Ser Gln Pro  
   1                  5                  10                  15

Arg Lys Gln Gln Gln Gln Gly Ala Gly Ala Val Val Val Phe Gln Arg  
                   20                  25                  30

Arg Pro Trp Asp Ala Arg Arg Arg Arg Tyr Val Val Pro Thr Ala Arg  
                   35                  40                  45

Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe  
                   50                  55                  60

Leu Gly Val Asp Glu Gly Ser Ser Lys His Leu His Ala His His Pro  
                   65                  70                  75                  80

Ala Pro Ala Pro Leu Leu Pro Arg Thr Tyr Thr Leu Thr His Ser Asp  
                   85                  90                  95

Val Thr Ala Ser Leu Thr Leu Ala Val Ser His Thr Ile Asn Arg Ala  
                   100                  105                  110

Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp Glu Val Val Ala  
                   115                  120                  125

Glu Trp Lys Lys Val Arg Gly Arg Met Ser Leu His Val His Cys His  
                   130                  135                  140

## Sequence Listing

---

Ile Ser Gly Gly His Leu Leu Asp Leu Ile Ala Gly Leu Arg Tyr  
 145                      150                      155                      160

Tyr Ile Phe Arg Lys Glu Leu Pro Val Val Leu Glu Ala Phe Val His  
                     165                      170                      175

Gly Asp Gly Asp Leu Phe Ser Arg His Pro Glu Leu Glu Glu Ala Thr  
                     180                      185                      190

Val Trp Val Tyr Phe His Ser Asn Leu Ala Arg Phe Asn Arg Val Glu  
                     195                      200                      205

Cys Trp Gly Pro Leu Arg Asp Ala Ala Ala Pro Ala Pro Ala Glu Asp  
                     210                      215                      220

Asp Ser Thr Ala Pro Ala Ala Ala Ser Ile Ala Met Glu Gly Gln Met  
 225                      230                      235                      240

Pro Val Gly Glu Trp Pro His Arg Cys Pro Gln Gln Cys Asp Cys Cys  
                     245                      250                      255

Phe Pro Pro His Ser Leu Ile Pro Trp Pro Asn Glu Gln Asp Met Ala  
                     260                      265                      270

Ala Ala Ala Gly Gln Val Arg Gln Gln  
                     275                      280

<210>    35  
 <211>    274  
 <212>    PRT  
 <213>    Zea mays

<400>    35  
 Met Ala Ala Ala Thr Ala Ala Ala Ser Thr Met Ser Leu Leu Pro Ile  
       1                      5                      10                      15

Ser Gln Leu Arg Gln Gln His Gly Ala Gly Ala Met Arg Arg Arg Pro  
                     20                      25                      30

## Sequence Listing

---

```

Trp Val Ala Arg Arg Arg Tyr Val Val Pro Thr Ala Arg Leu Phe
    35                40                45

Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly
    50                55                60

Val Asp Asp Glu Ala Gly Ser Lys Gln His Gly Pro Leu Pro Arg Thr
    65                70                75                80

Tyr Thr Leu Thr His Ser Asp Val Thr Ala Arg Leu Thr Leu Ala Val
                85                90                95

Ser His Thr Ile Asn Arg Ala Gln Leu Gln Gly Trp Tyr Asn Arg Leu
                100                105                110

Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Arg Gly Arg Met
    115                120                125

Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp
    130                135                140

Leu Ile Ala Gly Leu Arg Tyr Val Ile Phe Arg Lys Glu Leu Pro Val
    145                150                155                160

Val Leu Lys Ala Phe Val His Gly Asp Gly Asp Leu Phe Ser Arg His
                165                170                175

Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His Ser Asn Leu
                180                185                190

Ala Arg Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Arg Asp Ala Ala
    195                200                205

Ala Pro Ala Glu Asp Asp Ser Thr Ala Pro Pro Asp Ala Ser Asn Ser
    210                215                220

Lys Glu Ala Gly Gln Met Met Ala Met Cys Glu Trp Pro His Arg Cys
    225                230                235                240

Pro Gln Gln Cys Gly Cys Cys Phe Pro Pro His Ser Leu Ile Pro Trp

```



## Sequence Listing

---

245	250	255
Pro Asn Glu His Asp Met Ala Ala Ala Asp Ala Ser Gly Ser Ala Gln		
260	265	270

Gln Gln

<210> 36  
 <211> 266  
 <212> PRT  
 <213> Sorghum bicolor

<400> 36  
 Met Ala Ala Ala Thr Ala Ala Ala Ala Ser Thr Met Ser Leu Pro Pro  
 1 5 10 15

Ile Ser Gln Leu Arg Gln Gln Gln His Gly Ala Gly Ala Val Val Val  
 20 25 30

Phe Arg Arg Arg Ala Arg Asp Ala Arg Arg Arg Arg Tyr Val Val Pro  
 35 40 45

Thr Ala Arg Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys  
 50 55 60

Val Leu Phe Leu Gly Val Asp Glu Glu Ser Asn Asn Lys His Gly His  
 65 70 75 80

Pro Thr Thr Pro Ser Pro Thr Ser Pro Pro Leu Pro Leu Leu Pro Arg  
 85 90 95

Thr Tyr Thr Leu Thr His Ser Asp Val Thr Ala Ser Leu Thr Leu Ala  
 100 105 110

Val Ser His Thr Ile Asn Arg Ala Gln Leu Gln Gly Trp Tyr Asn Arg  
 115 120 125

Leu Gln Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Arg Gly Arg

## Sequence Listing

---

130	135	140	
Met Ser Leu His Val Leu Lys Ala Phe Val His Gly Asp Gly Asp Leu			
145	150	155	160
Phe Ser Arg His Pro Glu Leu Glu Asp Ala Pro Val Trp Val Tyr Phe			
	165	170	175
His Ser Asn Leu Thr Arg Phe Asn Arg Val Glu Cys Trp Gly Pro Leu			
	180	185	190
Arg Asp Ala Ala Ala Pro Pro Ala Glu Asp Asp Ser Thr Ala Pro Ala			
	195	200	205
Ala Ala Ser Asn Lys Asp Gly Gln Met Pro Pro Val Gly Glu Trp Pro			
	210	215	220
Tyr Arg Cys Pro Gln Gln Cys Asp Cys Cys Phe Pro Pro His Ser Leu			
225	230	235	240
Ile Pro Trp Pro Asn Glu Arg Asp Met Ala Ala Ala Ala Ala Asp Ala			
	245	250	255
Ser Ser Ala Ala Gly Gln Ala Gln Gln Gln			
	260	265	
<210>	37		
<211>	261		
<212>	PRT		
<213>	Glycine max		
<400>	37		
Met Cys Thr Leu Thr Thr Val Pro Val Leu Pro Ser Lys Leu Asn Lys			
1	5	10	15
Pro Ser Leu Ser Pro His His Asn Ser Leu Phe Pro Tyr Cys Gly Arg			
	20	25	30
Arg Val Gly Lys Lys Asn Lys Ala Met Val Pro Val Ala Arg Leu Phe			

## Sequence Listing

---

35	40	45
Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly		
50	55	60
Val Asp Glu Asn Lys His Pro Gly Asn Leu Pro Arg Thr Tyr Thr Leu		
65	70	75 80
Thr His Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala Ile Ser Gln Thr		
85	90	95
Ile Asn Asn Ser Gln Leu Gln Gly Trp Tyr Asn Arg Phe Gln Arg Asp		
100	105	110
Glu Val Val Ala Gln Trp Lys Lys Val Lys Gly Arg Met Ser Leu His		
115	120	125
Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Ile Leu Ala		
130	135	140
Arg Leu Arg Tyr Phe Ile Phe Cys Lys Glu Leu Pro Val Val Leu Lys		
145	150	155 160
Ala Val Val His Gly Asp Glu Asn Leu Phe Asn Ser Tyr Pro Glu Leu		
165	170	175
Gln Asp Ala Leu Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Phe		
180	185	190
Asn Lys Val Glu Cys Trp Gly Pro Leu Lys Glu Ala Ser Ala Pro Thr		
195	200	205
Gly Gly Val Gln Glu Glu Gly Leu Ala Ile Pro Gln Pro Cys Gln Glu		
210	215	220
Glu Cys Gln Cys Cys Phe Pro Pro Leu Thr Leu Ser Pro Ile Gln Trp		
225	230	235 240
Ser Lys Gln Val Pro Ser Arg His Tyr Glu Pro Cys Asp Gly Ile Gly		
245	250	255

## Sequence Listing

---

Thr Gln Gln Asn Leu

260

<210> 38

<211> 271

<212> PRT

<213> Glycine max

<400> 38

Met Gly Thr Leu Thr Thr Val Pro Val Leu Pro Ser Lys Leu Asn Lys

1 5 10 15

Pro Ser Leu Ser Pro Arg His Asn Ser Leu Phe Pro Tyr Tyr Gly Arg

20 25 30

Arg Val Gly Lys Lys Asn Lys Ala Met Val Pro Val Ala Arg Leu Phe

35 40 45

Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly

50 55 60

Val Asp Glu Asn Lys His Pro Gly Asn Leu Pro Arg Thr Tyr Thr Leu

65 70 75 80

Thr His Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala Ile Ser Gln Thr

85 90 95

Ile Asn Asn Ser Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp

100 105 110

Glu Val Val Ala Gln Trp Lys Lys Val Lys Gly Lys Met Ser Leu His

115 120 125

Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Ile Leu Ala

130 135 140

Arg Leu Arg Tyr Phe Ile Phe Cys Arg Glu Leu Pro Val Val Leu Lys

145 150 155 160

## Sequence Listing

---

Ala Val Val His Gly Asp Glu Asn Leu Phe Asn Asn Tyr Pro Glu Leu  
                   165                  170                  175

Gln Asp Ala Leu Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Phe  
                   180                  185                  190

Asn Lys Val Glu Cys Trp Gly Pro Leu Lys Glu Ala Ser Ala Pro Ile  
                   195                  200                  205

Gly Gly Ala Lys Glu Glu Ser Glu Gln Glu Thr Leu Leu Ser Lys Glu  
                   210                  215                  220

Gly Leu Ala Ile Pro Gln Pro Cys Gln Glu Glu Cys Glu Cys Cys Phe  
                   225                  230                  235                  240

Pro Pro Leu Thr Leu Ser Pro Ile Gln Trp Ser Gln Gln Val Pro Ser  
                   245                  250                  255

His His Tyr Glu Pro Cys Asp Gly Ile Glu Thr Gln Gln Ser Leu  
                   260                  265                  270

<210> 39

<211> 274

<212> PRT

<213> Vitis vinifera

<400> 39

Met Ala Thr Leu Thr Ala Ala Leu Val Leu Pro Ser Glu Leu Lys Pro  
           1                  5                  10                  15

Ser Phe Ser Gln His Gln Ser Ser Leu Phe Val Cys Arg Arg Arg Pro  
           20                  25                  30

Lys Lys Ser Asn Pro Ala Phe Pro Ala Ala Arg Leu Phe Gly Pro Ala  
           35                  40                  45

## Sequence Listing

---

```

Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp Glu
   50                               55                               60

Lys Lys His Pro Gly Lys Leu Pro Arg Thr Tyr Thr Leu Thr His Ser
   65                               70                               75                               80

Asp Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn Asn
      85                               90                               95

Ser Gln Leu Gln Gly Trp Ser Asn Arg Leu Gln Arg Asp Glu Val Val
      100                               105                               110

Ala Gln Trp Lys Lys Val Lys Asp Gln Met Ser Leu His Val His Cys
      115                               120                               125

His Ile Ser Gly Gly His Phe Leu Leu Asp Leu Cys Ala Lys Leu Arg
      130                               135                               140

Tyr Phe Ile Phe Cys Lys Glu Leu Pro Val Val Leu Lys Ala Phe Val
      145                               150                               155                               160

His Gly Asp Gly Asn Leu Leu Asn Asn Tyr Pro Glu Leu Gln Glu Ala
      165                               170                               175

Leu Val Trp Val Tyr Phe His Ser Asn Leu Pro Glu Phe Asn Arg Val
      180                               185                               190

Glu Cys Trp Gly Ala Leu Asn Asn Ala Ala Ala Pro Pro Pro Pro Ala
      195                               200                               205

Ala Gly Gly Gly Gly Gly Arg Val Glu Ala His Gln Asp Met Arg Gln
      210                               215                               220

Val Glu Pro Ser Ser Lys Trp Glu Arg Pro Glu Glu Pro Cys Met Glu
      225                               230                               235                               240

Asn Cys Thr Cys Cys Phe Pro Pro Met Ser Leu Ile Pro Trp Ser Gln
      245                               250                               255

Asp Leu Ala His Glu Asn Ile His Asp Thr Gln Lys Gly Leu Gln Gln

```

## Sequence Listing

---

260	265	270
Gln Thr		
<210>	40	
<211>	280	
<212>	PRT	
<213>	Lactuca sativa	
<400>	40	
Met Ala Ser Leu Ile Leu Pro Thr Lys Gln Asn Pro Pro Ser Ser Ser		
1 5 10 15		
Phe Leu His Gln Asn His Gln Asn Asn Pro Phe Phe Thr Asn Lys Arg		
20 25 30		
Arg Lys Leu Lys Arg Asn Gln Ala Leu Val Pro Val Ala Arg Leu Phe		
35 40 45		
Gly Pro Ser Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly		
50 55 60		
Val Asp Glu Lys Lys His Pro Gly Lys Leu Pro Arg Thr Tyr Thr Leu		
65 70 75 80		
Thr His Ser Asp Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser Gln Thr		
85 90 95		
Ile Asn Asn Ser Gln Leu Gln Gly Trp Tyr Asn Gln Leu Tyr Arg Asp		
100 105 110		
Glu Val Val Ala Glu Trp Arg Lys Val Lys Gly Asn Met Ser Leu His		
115 120 125		
Val His Cys His Ile Ser Arg Gly His Phe Leu Leu Asp Leu Cys Ala		
130 135 140		
Arg Leu Arg Phe Phe Ile Phe Thr Lys Glu Leu Pro Leu Val Leu Lys		

## Sequence Listing

---

145	150	155	160
Ala Phe Ala His Gly Asp Gly Asn Leu Leu Asn Ser Tyr Pro Glu Leu			
	165	170	175
Gln Glu Ala Ser Val Trp Val Tyr Phe His Ser Asn Ile Gln Glu Phe			
	180	185	190
Asn Arg Val Glu Cys Trp Gly Pro Leu Arg Glu Ala Val Gly Pro Leu			
	195	200	205
Ser Thr Thr Thr Ser Ser Ser Ser Ser Ser Ser Leu Ser Glu Ser Thr			
	210	215	220
Ile Ala Glu Ala Gly Glu Gly Ser Asn Asn Trp Glu Ile Pro Lys Pro			
	225	230	240
Cys Leu Glu Ala Cys Ala Cys Cys Phe Pro Pro Met Ser Ser Ile Pro			
	245	250	255
Trp Ser His Asp Leu Val Lys Asn Gln Asp Asp Asp Asp Gly Ala Thr			
	260	265	270
His Gln Gly Leu Gln Gln Lys Ala			
	275	280	
<210> 41			
<211> 290			
<212> PRT			
<213> Pinus taeda			
<400> 41			
Met Ala Val Ala Arg Ile Ser Ala Gly Lys Thr Gln His Cys Tyr Ser			
1	5	10	15
Phe Ser Pro Ser Asp Val Arg Ile Ser Ser Ala Pro Gln Asn Ser Gln			
	20	25	30
Ser Gln Phe Lys Arg Lys Ser Lys Ile Lys Leu Ser Ser Arg Phe Leu			



## Sequence Listing

---

35	40	45
Ala Ser Glu Ser Ser Trp Asn Gly Leu Val Ala His Gln Leu Gln Cys		
50	55	60
Asn Asn Arg His Arg Thr Asn Ser Ser Phe Pro Arg Ser Thr Ser Arg		
65	70	75
Val Val Ala Arg Leu Phe Gly Pro Ala Ile Phe Gln Ala Ser Lys Leu		
85	90	95
Lys Val Leu Phe Leu Gly Thr His Glu Glu Lys His Pro Ala His Leu		
100	105	110
Pro Arg Thr Tyr Thr Leu Thr His Ser Asp Ile Thr Ala Lys Leu Thr		
115	120	125
Leu Ala Phe Ser Gln Thr Ile Asn Lys Asp Gln Gly Trp Tyr Asn Arg		
130	135	140
Leu Gln Arg Asp Glu Val Leu Ala Gln Trp Lys Lys Ser Gln Gly Lys		
145	150	155
Met Ser Leu His Val His Cys His Ile Ser Gly Gly His Trp Leu Leu		
165	170	175
Asp Ala Ile Ala Arg Leu Arg Phe Tyr Ile Phe Arg Lys Glu Leu Pro		
180	185	190
Val Val Leu Glu Ala Phe Arg His Gly Asp Arg Ala Leu Leu Glu Lys		
195	200	205
His Pro Glu Leu Glu Thr Ala Leu Val Trp Val Tyr Phe His Ser Asn		
210	215	220
Val Lys Glu Phe Lys Arg Val Glu Cys Trp Gly Ser Leu Ala Glu Ala		
225	230	235
Cys Lys Gly Ala Pro Ser Asn Leu Asn Lys Glu Leu Asp Glu Leu Asp		
245	250	255

## Sequence Listing

---

Gly Gly Lys Leu Glu Met Pro Ser His Cys Ala Glu Pro Cys Ser Cys  
                   260                  265                  270

Cys Phe Pro Pro Phe Ser Val Leu Leu Arg Pro Glu Asp Val Glu Gln  
           275                  280                  285

Phe Ser  
       290

<210>      42  
 <211>      271  
 <212>      PRT  
 <213>      Citrus sinensis

<400>      42  
 Met Ala Ser Leu Val Ala Ala Leu Gly Leu Pro Ser Lys Leu Lys Ala  
       1                  5                  10                  15

Ser Pro Tyr Glu Gln Gln Asn Ala Leu Phe Val Ser Arg Arg Arg Ser  
                   20                  25                  30

Lys Lys Lys Asn Gln Ser Phe Ala Pro Val Ala Arg Leu Phe Gly Pro  
           35                  40                  45

Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp  
       50                  55                  60

Glu Glu Lys His Pro Gly Lys Leu Pro Arg Thr Tyr Thr Leu Thr His  
       65                  70                  75                  80

Ser Asp Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn  
                   85                  90                  95

Asn Ser Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp Glu Val  
           100                  105                  110

Val Ala Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His Val His  
           115                  120                  125

## Sequence Listing

---

Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Ile Cys Ala Arg Leu  
 130                      135                      140

Arg Phe Phe Ile Phe Ser Lys Glu Leu Pro Val Val Leu Lys Ala Phe  
 145                      150                      155                      160

Val His Gly Asp Gly Asn Leu Leu Asn Asn His Pro Glu Leu Gln Glu  
                          165                      170                      175

Ala Leu Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Phe Asn Lys  
                          180                      185                      190

Val Glu Cys Trp Gly Pro Leu Lys Glu Ala Val Ala Gly Ser Ser Glu  
                          195                      200                      205

Ala Gly Gly Thr Arg His Glu Ile Arg Gln Glu Thr Ser Ile Ser Asn  
                          210                      215                      220

Trp Glu Leu Pro Glu Pro Cys Gln Glu Thr Cys Asn Cys Cys Phe Pro  
 225                      230                      235                      240

Pro Met Ser Leu Ile Pro Trp Ser Glu Lys Leu Pro Leu Gln Thr Glu  
                          245                      250                      255

Asn Arg Gly Thr Gln Gly Gln Glu Ser Leu Gln Gln Gln Thr Arg  
                          260                      265                      270

<210>    43  
 <211>    263  
 <212>    PRT  
 <213>    Medicago truncatula

<400>    43  
 Met Gly Thr Leu Thr Thr Ala Pro Pro Pro Met Leu Thr Ser Lys Phe  
       1                      5                      10                      15

## Sequence Listing

---

```

Lys  Pro  Ser  Phe  Ser  Pro  Gln  His  Lys  Pro  Leu  Phe  Pro  Asn  Arg  Arg
      20                      25                      30

Arg  Leu  Trp  Lys  Lys  Asn  Gln  Ser  Ile  Val  Pro  Val  Ala  Arg  Leu  Phe
      35                      40                      45

Gly  Pro  Ala  Ile  Phe  Glu  Ala  Ser  Lys  Leu  Lys  Val  Leu  Phe  Leu  Gly
      50                      55                      60

Ile  Asp  Glu  Asp  Lys  His  Pro  Gly  Asn  Leu  Pro  Arg  Thr  Tyr  Thr  Leu
      65                      70                      75                      80

Thr  His  Ser  Asp  Val  Thr  Ser  Lys  Leu  Thr  Leu  Ala  Ile  Ser  Gln  Thr
      85                      90                      95

Ile  Asn  Asn  Ser  Gln  Leu  Gln  Gly  Trp  Tyr  Asn  Arg  Leu  Gln  Arg  Asp
      100                     105                     110

Glu  Val  Val  Ala  Gln  Trp  Lys  Lys  Val  Lys  Gly  Lys  Met  Ser  Leu  His
      115                     120                     125

Val  His  Cys  His  Ile  Ser  Gly  Gly  His  Phe  Leu  Leu  Asp  Ile  Phe  Ala
      130                     135                     140

Arg  Leu  Arg  Tyr  Phe  Ile  Phe  Cys  Lys  Glu  Leu  Pro  Val  Val  Leu  Lys
      145                     150                     155                     160

Ala  Phe  Val  His  Gly  Asp  Gly  Asn  Leu  Phe  Asn  Asn  Tyr  Pro  Glu  Leu
      165                     170                     175

Gln  Glu  Ala  Leu  Val  Trp  Val  Tyr  Phe  His  Ser  Lys  Ile  Pro  Glu  Phe
      180                     185                     190

Asn  Lys  Val  Glu  Cys  Trp  Gly  Pro  Leu  Lys  Glu  Ala  Ser  Gln  Pro  Thr
      195                     200                     205

Ser  Gly  Thr  Gln  Arg  Asp  His  Gln  Asn  Leu  Thr  Leu  Pro  Glu  Pro  Cys
      210                     215                     220

Gln  Glu  Thr  Cys  Glu  Cys  Cys  Phe  Pro  Pro  Leu  Lys  Leu  Ser  Pro  Met

```

## Sequence Listing

---

225	230	235	240
Pro Cys Ser Asn Glu Val His Asn Asp Thr Tyr Glu Pro Ile Asp Gly			
	245	250	255

Ile Glu Thr Gln Gln Ser Leu  
260

<210> 44  
 <211> 272  
 <212> PRT  
 <213> Solanum tuberosum

<400> 44			
Met Gly Thr Leu Thr Ala Ser Leu Val Val Pro Ser Lys Leu Asn Asn			
1	5	10	15

Glu Lys Gln Ser Ser Ile Phe Val His Lys Thr Arg Arg Lys Ser Lys			
20	25	30	

Lys Asn Gln Ser Ile Val Pro Val Ala Arg Leu Phe Gly Pro Ala Ile			
35	40	45	

Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp Glu Glu			
50	55	60	

Lys His Pro Gly Lys Leu Pro Arg Thr Tyr Thr Leu Thr His Ser Asp			
65	70	75	80

Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn Asn Ser			
85	90	95	

Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp Glu Val Val Ala			
100	105	110	

Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His Val His Cys His			
115	120	125	

Ile Ser Gly Gly His Phe Met Leu Asp Leu Phe Ala Arg Leu Arg Asn

## Sequence Listing

---

130	135	140	
Tyr Ile Phe Cys Lys Glu Leu Pro Val Val Leu Lys Ala Phe Val His			
145	150	155	160
Gly Asp Glu Asn Leu Leu Lys Asn Asn Pro Glu Leu Gln Glu Ala Leu			
165	170	175	
Val Trp Val Tyr Phe His Ser Asn Ile Gln Glu Phe Asn Lys Val Glu			
180	185	190	
Cys Trp Gly Pro Leu Lys Asp Ala Thr Ser Pro Ser Ser Ser Ser Ser			
195	200	205	
Gly Val Gly Gly Val Lys Ser Thr Ser Phe Thr Ser Asn Ser Asn Asn			
210	215	220	
Lys Trp Glu Leu Pro Lys Pro Cys Glu Glu Ala Cys Ala Cys Cys Phe			
225	230	235	240
Pro Pro Met Ser Val Met Pro Trp Pro Ser Ser Asn Leu Asp Gly Ile			
245	250	255	
Gly Glu Glu Asn Gly Thr Ile Gln Gln Gly Leu Gln Glu Gln Gln Ser			
260	265	270	

<210> 45  
 <211> 269  
 <212> PRT  
 <213> Populus tremula

<400> 45  
 Met Gly Ser Leu Ala Ile Ala Pro Phe Leu Pro Ser Lys Leu Arg Pro  
 1 5 10 15  
 Ser Ile Leu Asp Gln Asn Ser Ser Leu Phe Pro Ser Lys Lys Lys Leu  
 20 25 30

## Sequence Listing

---

```

Lys Arg Lys Asn Gln Ser Ile Ser Pro Val Ala Arg Leu Phe Gly Pro
    35                      40                      45

Ser Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp
    50                      55                      60

Glu Lys Lys His Pro Gly Asn Leu Pro Arg Thr Tyr Thr Leu Thr His
    65                      70                      75                      80

Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn
                      85                      90                      95

Asn Ser Gln Leu Gln Gly Trp Ser Asn Lys Leu Tyr Arg Asp Glu Val
                      100                      105                      110

Val Ala Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His Val His
                      115                      120                      125

Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Leu Cys Cys Arg Leu
                      130                      135                      140

Arg Tyr Phe Ile Phe Arg Lys Glu Leu Pro Val Val Leu Lys Ala Phe
                      145                      150                      155                      160

Phe His Gly Asp Gly Asn Leu Phe Ser Ser Tyr Pro Glu Leu Gln Glu
                      165                      170                      175

Ala Leu Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Phe Asn Lys
                      180                      185                      190

Val Glu Cys Trp Gly Pro Leu Lys His Ala Ala Ala Pro Tyr Thr Ala
                      195                      200                      205

Ala Ser Gly Gly Ala Pro Glu Asn Lys Glu Gln Ala Thr Asp Trp Asn
                      210                      215                      220

Leu Pro Glu Pro Cys Gln Glu Asn Cys Gln Cys Cys Phe Pro Pro Met
                      225                      230                      235                      240

```

## Sequence Listing

---

Ser Leu Ile Pro Trp Ser Glu Met Val Pro Gln Glu Asn Lys Asn Asn  
                           245                          250                          255

Pro Ser Thr Gln Gln Thr Phe Gln Gln Ala Gln Gln Pro  
                           260                          265

<210>      46  
 <211>      270  
 <212>      PRT  
 <213>      Populus tremula

<400>      46  
 Met Gly Ser Leu Ala Val Ala Pro Phe Leu Pro Ser Lys Pro Arg Pro  
       1                          5                          10                          15

Ser Leu Phe Asp Gln His Ser Ser Leu Phe Ser Pro Ser Thr Lys Leu  
                           20                          25                          30

Lys Arg Lys Asn Gln Ser Ile Ser Pro Val Ala Arg Leu Phe Gly Pro  
                           35                          40                          45

Ser Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp  
                           50                          55                          60

Glu Lys Glu His Pro Gly Asn Leu Pro Arg Thr Tyr Thr Leu Thr His  
       65                          70                          75                          80

Ser Asp Met Thr Ala Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn  
                           85                          90                          95

Asn Ser Gln Leu Gln Gly Trp Ser Asn Lys Leu Tyr Arg Asp Glu Val  
                           100                          105                          110

Val Ala Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His Val His  
                           115                          120                          125

Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Trp Cys Cys Arg Leu  
                           130                          135                          140



## Sequence Listing

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Arg Tyr Phe Ile Phe Arg Arg Glu Leu Pro Val Val Leu Lys Ala Phe  
145                                      150                                      155                                      160

Phe His Gly Asp Gly Ser Leu Leu Ser Asn Tyr Pro Glu Leu Gln Glu  
   165                                      170                                      175

Gly Leu Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Phe Ser Lys  
   180                                      185                                      190

Val Glu Cys Trp Gly Pro Leu Lys Asp Ala Ala Ala Pro Ser Thr Ser  
   195                                      200                                      205

Glu Thr Gly Gly Ser Asn Glu Thr Glu Glu Leu Ala Asn Gln Ser Ser  
   210                                      215                                      220

Asn Trp Asp Leu Pro Glu Pro Cys Gln Glu Glu Asn Cys Ser Cys Cys  
225                                      230                                      235                                      240

Phe Pro Pro Met Ser Leu Ile Pro Trp Ser Lys Met Val Pro Leu Glu  
   245                                      250                                      255

Asp Lys Asn Asn Pro Ser Thr Pro Gln Asn Leu Gln Gln Pro  
   260                                      265                                      270

<210>      47

<211>      286

<212>      PRT

<213>      Mesembryanthemum crystallinum

<400>      47

Met Gly Thr Leu Thr Ala Ser Met Leu Leu Pro Ser Lys Leu Lys Pro  
1                                      5                                      10                                      15

Ser Val Phe Glu Asp Gln Ser Ser Val Tyr Phe Lys Arg Ser Cys Arg  
   20                                      25                                      30

Gly Leu Pro Lys Leu Asn Lys Ala Lys Ser Phe Ser Pro Val Met Arg  
   35                                      40                                      45

## Sequence Listing

---

```

Leu Phe Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe
   50                               55                               60

Leu Gly Val Asp Lys Glu Lys His Pro Gly Lys Leu Pro Arg Thr Tyr
   65                               70                               75                               80

Thr Leu Thr His Ser Asp Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser
                               85                               90                               95

Gln Thr Ile Asn Asn Ser Gln Leu Gln Gly Trp Tyr Asn Gln Leu Gln
                               100                               105                               110

Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Lys Gly Lys Met Ser
                               115                               120                               125

Leu His Val His Cys His Ile Ser Gly Gly His Ile Leu Leu Asp Leu
   130                               135                               140

Phe Ala Lys Leu Arg Phe Tyr Ile Phe Cys Lys Glu Leu Pro Val Val
   145                               150                               155                               160

Leu Lys Ala Phe Val His Gly Asp Glu Asn Leu Phe Asn Asn Tyr Pro
                               165                               170                               175

Glu Leu Gln Glu Ala Met Val Trp Val Tyr Phe His Ser Asn Leu Glu
                               180                               185                               190

Glu Phe Asn Lys Ile Glu Cys Trp Gly Pro Leu Lys Asp Ala Val Ala
   195                               200                               205

Arg Asn Ser Lys Lys Asn Lys Asn Lys Asn Lys Ile Asp Phe Lys Leu
   210                               215                               220

Ser Phe Lys Glu Glu Asp Asp Ser Pro Asp Asn Glu Leu Glu Ile Pro
   225                               230                               235                               240

Glu Thr Cys Lys Glu Pro Cys Thr Cys Cys Phe Pro Pro Thr Ser Val
                               245                               250                               255

Ile Pro Trp Ser His Ser Ala Leu Ser Gln Gly Asp Asp Leu His Leu

```

## Sequence Listing

---

260	265	270
Ser Gly Gly Thr His Gln Gly Leu Glu Gln Gln Gln Thr		
275	280	285
<210> 48		
<211> 268		
<212> PRT		
<213> Arabidopsis thaliana		
<400> 48		
Met Cys Ser Leu Ser Ala Ile Met Leu Leu Pro Thr Lys Leu Lys Pro		
1	5	10 15
Ala Tyr Ser Asp Lys Arg Ser Asn Ser Ser Ser Ser Ser Ser Leu Phe		
20	25	30
Phe Asn Asn Arg Arg Ser Lys Lys Lys Asn Gln Ser Ile Val Pro Val		
35	40	45
Ala Arg Leu Phe Gly Pro Ala Ile Phe Glu Ser Ser Lys Leu Lys Val		
50	55	60
Leu Phe Leu Gly Val Asp Glu Lys Lys His Pro Ser Thr Leu Pro Arg		
65	70	75 80
Thr Tyr Thr Leu Thr His Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala		
85	90	95
Ile Ser Gln Ser Ile Asn Asn Ser Gln Leu Gln Gly Trp Ala Asn Arg		
100	105	110
Leu Tyr Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Lys Gly Lys		
115	120	125
Met Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu		
130	135	140

## Sequence Listing

---

Asp Leu Phe Ala Lys Phe Arg Tyr Phe Ile Phe Cys Lys Glu Leu Pro  
 145                      150                      155                      160

Val Val Leu Lys Ala Phe Val His Gly Asp Gly Asn Leu Leu Asn Asn  
                     165                      170                      175

Tyr Pro Glu Leu Gln Glu Ala Leu Val Trp Val Tyr Phe His Ser Asn  
                     180                      185                      190

Val Asn Glu Phe Asn Lys Val Glu Cys Trp Gly Pro Leu Trp Glu Ala  
                     195                      200                      205

Val Ser Pro Asp Gly His Lys Thr Glu Thr Leu Pro Glu Ala Arg Cys  
                     210                      215                      220

Ala Asp Glu Cys Ser Cys Cys Phe Pro Thr Val Ser Ser Ile Pro Trp  
 225                      230                      235                      240

Ser His Ser Leu Ser Asn Glu Gly Val Asn Gly Tyr Ser Gly Thr Gln  
                     245                      250                      255

Thr Glu Gly Ile Ala Thr Pro Asn Pro Glu Lys Leu  
                     260                      265

<210>    49  
 <211>    271  
 <212>    PRT  
 <213>    Arabidopsis thaliana

<400>    49  
 Met Cys Ser Leu Ala Thr Asn Leu Leu Leu Pro Ser Lys Met Lys Pro  
       1                      5                      10                      15

Val Phe Pro Glu Lys Leu Ser Thr Ser Ser Leu Cys Val Thr Thr Arg  
                     20                      25                      30

Arg Ser Lys Met Lys Asn Arg Ser Ile Val Pro Val Ala Arg Leu Phe  
                     35                      40                      45

## Sequence Listing

---

```

Gly Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly
  50                      55                      60

Val Asp Glu Lys Lys His Pro Ala Lys Leu Pro Arg Thr Tyr Thr Leu
  65                      70                      75                      80

Thr His Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala Ile Ser Gln Ser
                      85                      90                      95

Ile Asn Asn Ser Gln Leu Gln Gly Trp Ala Asn Lys Leu Phe Arg Asp
          100                      105                      110

Glu Val Val Gly Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His
          115                      120                      125

Val His Cys His Ile Ser Gly Gly His Phe Phe Leu Asn Leu Ile Ala
          130                      135                      140

Lys Leu Arg Tyr Tyr Ile Phe Cys Lys Glu Leu Pro Val Val Leu Glu
          145                      150                      155                      160

Ala Phe Ala His Gly Asp Glu Tyr Leu Leu Asn Asn His Pro Glu Leu
          165                      170                      175

Gln Glu Ser Pro Val Trp Val Tyr Phe His Ser Asn Ile Pro Glu Tyr
          180                      185                      190

Asn Lys Val Glu Cys Trp Gly Pro Leu Trp Glu Ala Met Ser Gln His
          195                      200                      205

Gln His Asp Gly Arg Thr His Lys Lys Ser Glu Thr Leu Pro Glu Leu
          210                      215                      220

Pro Cys Pro Asp Glu Cys Lys Cys Cys Phe Pro Thr Val Ser Thr Ile
          225                      230                      235                      240

Pro Trp Ser His Arg His Tyr Gln His Thr Ala Ala Asp Glu Asn Val
          245                      250                      255

```

## Sequence Listing

---

Ala Asp Gly Leu Leu Glu Ile Pro Asn Pro Gly Lys Ser Lys Gly  
                   260                  265                  270

<210> 50  
 <211> 221  
 <212> PRT  
 <213> Lycopersicon esculentum

<400> 50  
 Met Gly Thr Leu Thr Thr Ser Leu Val Val Pro Ser Lys Leu Asn Asn  
       1                  5                  10                  15

Glu Gln Gln Ser Ser Ile Phe Ile His Lys Thr Arg Arg Lys Cys Lys  
                   20                  25                  30

Lys Asn Gln Ser Ile Val Pro Val Ala Arg Leu Phe Gly Pro Ala Ile  
           35                  40                  45

Phe Glu Ala Ser Lys Leu Lys Val Leu Phe Leu Gly Val Asp Glu Glu  
       50                  55                  60

Lys His Pro Gly Lys Leu Pro Arg Thr Tyr Thr Leu Thr His Ser Asp  
       65                  70                  75                  80

Ile Thr Ser Lys Leu Thr Leu Ala Ile Ser Gln Thr Ile Asn Asn Ser  
                   85                  90                  95

Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp Glu Val Val Ala  
                   100                  105                  110

Glu Trp Lys Lys Val Lys Gly Lys Met Ser Leu His Val His Cys His  
           115                  120                  125

Ile Ser Gly Gly His Phe Met Leu Asp Leu Phe Ala Arg Leu Arg Asn  
       130                  135                  140

Tyr Ile Phe Cys Lys Glu Leu Pro Val Val Leu Lys Ala Phe Val His

## Sequence Listing

---

```

145              150              155              160
Gly Asp Glu Asn Leu Leu Arg Asn Tyr Pro Glu Leu Gln Glu Ala Leu
              165              170              175
Val Trp Val Tyr Phe His Ser Asn Ile Gln Glu Phe Asn Lys Val Glu
              180              185              190
Cys Trp Gly Pro Leu Arg Asp Ala Thr Ser Pro Ser Ser Ser Ser Gly
              195              200              205
Gly Val Gly Gly Val Lys Ser Thr Ser Phe Thr Ser His
              210              215              220

```

```

<210>    51
<211>    110
<212>    PRT
<213>    Beta vulgaris

```

```

<400>    51
Pro Glu Leu Gln Glu Ala Ser Val Trp Val Tyr Phe His Ser Ser Ile
  1              5              10              15
Pro Glu Phe Asn Lys Val Glu Cys Trp Gly Pro Leu Thr Asp Ala Val
              20              25              30
Asp Pro Pro Ser Lys Asn Lys Lys Arg Met Met Met Ile Asn Asp Glu
              35              40              45
Gln Asp Lys Glu Glu Glu Glu Glu Ala Ser Ser Ser Lys Trp Glu Met
              50              55              60
Leu Val Pro Cys Thr Lys Pro Cys Arg Cys Cys Phe Pro Pro Thr Ser
              65              70              75              80
Leu Ile Pro Trp Thr Pro Ser Leu Ser Gln Glu Gln Gln Gln Glu Gln
              85              90              95

```

## Sequence Listing

---

Gln Leu Pro Gly Asp Val Ser Ile Pro Pro Pro Gly Thr Arg  
 100 105 110

<210> 52  
 <211> 187  
 <212> PRT  
 <213> Zoysia japonica

<400> 52  
 Thr Tyr Thr Leu Thr His Ser Asp Val Thr Ala Lys Leu Thr Leu Ala  
 1 5 10 15

Val Ser His Thr Ile His Ala Ala Gln Leu Gln Gly Trp Tyr Asn Arg  
 20 25 30

Leu Gln Arg Asp Glu Val Val Ala Glu Trp Arg Lys Val Arg Gly Asn  
 35 40 45

Met Ser Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Arg  
 50 55 60

Asp Leu Ile Ala Pro Leu Arg Tyr Tyr Ile Phe Arg Lys Glu Leu Pro  
 65 70 75 80

Val Val Leu Lys Ala Phe Val His Gly Asp Gly Ser Leu Phe Ser Ser  
 85 90 95

His Pro Glu Leu Glu Glu Ala Thr Val Trp Val Tyr Phe His Ser Asn  
 100 105 110

Leu Pro Arg Phe Asn Arg Val Glu Cys Trp Gly Pro Leu Cys Asp Ala  
 115 120 125

Ala Ala Pro Val Glu Glu Glu Gly Gln Gln Asn Asp Asp Arg Leu Pro  
 130 135 140

Ala Gly Glu Trp Pro Arg Arg Cys Pro Gln Gln Cys Glu Cys Cys Phe  
 145 150 155 160



## Sequence Listing

---

Pro Pro His Ser Leu Ile Pro Trp Pro Asn Glu His Asp Met Ala Pro  
                   165                  170                  175

Thr Asp Ala Pro Ala Ala Gly Gln Thr Gln Gln  
                   180                  185

<210>      53  
 <211>      93  
 <212>      PRT  
 <213>      *Lotus corniculatus* var. *japonicus*

<400>      53  
 Tyr Pro Glu Leu Gln Asp Ala Leu Val Trp Val Tyr Phe His Ser Lys  
       1                  5                  10                  15

Ile Pro Glu Phe Asn Lys Val Gln Cys Trp Gly Pro Leu Lys Glu Ala  
                   20                  25                  30

Ala Ala Pro Ser Gly Gly Ser Pro Glu Lys Glu Gly Glu Gly Val Lys  
                   35                  40                  45

Met Pro Asp Pro Cys Pro Glu Glu Cys Glu Cys Cys Phe Pro Pro Pro  
       50                  55                  60

Pro Ala Leu Asp Pro Ile Pro Trp Ser Glu Glu Val Pro Ser Pro His  
       65                  70                  75                  80

Tyr Glu Ala Phe Asp Gly Val Gly Thr Arg Pro Asn Leu  
                   85                  90

<210>      54  
 <211>      107  
 <212>      PRT  
 <213>      *Lotus corniculatus* var. *japonicus*

<400>      54  
 Asp Leu Cys Ala Lys Leu Arg Tyr Phe Ile Phe Cys Lys Glu Leu Pro

## Sequence Listing

---

```

1           5           10           15
Val Val Leu Lys Ala Phe Ile His Gly Asp Glu Asn Leu Phe Asn Asn
      20           25           30

Tyr Pro Glu Leu Glu Glu Ser Leu Val Trp Val Tyr Phe His Ser Asn
      35           40           45

Ile Ser Glu Phe Asn Lys Val Glu Cys Trp Gly Pro Leu Lys Asp Ala
      50           55           60

Cys Ala Thr Ser Ile Gly Ser Tyr Ser Tyr Asp Lys Gly Met Pro Gln
      65           70           75           80

Thr Gln Pro Cys Gln Gln Asn Cys Glu Cys Cys Phe Thr Pro Met Ser
      85           90           95

Ser Ser Asp Trp Ile Gly Thr Gln Gln Lys Leu
      100           105

```

```

<210>      55
<211>     137
<212>      PRT
<213>      Saccharum officinarum

```

```

<400>      55
Thr Arg Leu Asp Leu Ile Ala Gly Leu Arg Tyr Tyr Ile Phe Arg Lys
  1           5           10           15

Glu Leu Pro Val Val Leu Lys Ala Phe Val His Gly Asp Gly Asp Leu
      20           25           30

Phe Ser Arg His Pro Glu Leu Glu Asp Ala Thr Val Trp Val Tyr Phe
      35           40           45

His Ser Asn Leu Thr Arg Phe Asn Arg Val Glu Cys Trp Gly Pro Leu
      50           55           60

Arg Asp Ala Ala Ala Pro Pro Ala Glu Glu Asp Ser Thr Ala Pro Ala

```

## Sequence Listing

---

```

65              70              75              80
Ala Ser Asn Ser Lys Glu Gly Gln Met Pro Pro Val Gly Glu Trp Pro
      85              90              95
Tyr Arg Cys Pro Gln Gln Cys Asp Cys Cys Phe Pro Pro His, Ser Leu
      100             105             110
Ile Pro Trp Pro Asn Glu His Asp Met Ala Ala Ala Ala Ala Asp Ala
      115             120             125
Thr Ala Ala Gly Gln Ala Gln Gln Gln
      130             135

<210>      56
<211>      159
<212>      PRT
<213>      Picea

<400>      56
Ile Asn Lys Asp Gln Leu Gln Gly Trp Tyr Asn Arg Leu Gln Arg Asp
  1              5              10              15
Glu Val Ile Ala Gln Trp Lys Lys Ser Gln Gly Lys Met Ser Leu His
      20              25              30
Val His Cys His Ile Ser Gly Gly His Trp Leu Leu Asp Ala Ile Ala
      35              40              45
Arg Leu Arg Phe Tyr Ile Phe Arg Lys Glu Leu Pro Val Val Leu Glu
      50              55              60
Ala Phe Arg His Gly Asp Arg Ala Leu Leu Asp Lys His Pro Glu Leu
      65              70              75              80
Glu Thr Ala Leu Val Trp Val Tyr Phe His Ser Asn Val Arg Glu Phe
      85              90              95
Lys Arg Val Glu Cys Trp Gly Ser Leu Ala Glu Ala Cys Lys Gly Ala

```

## Sequence Listing

---

100	105	110
Pro Ser Asn Leu Glu Lys Glu Leu Asp Glu Glu Phe Asn Gly Glu Lys		
115	120	125
Leu Glu Met Pro Ser His Cys Ser Glu Pro Cys Asn Cys Cys Phe Pro		
130	135	140
Pro Phe Ser Val Leu Leu Arg Pro Glu Asp Ala Glu Gln Phe Ile		
145	150	155
<210>	57	
<211>	210	
<212>	PRT	
<213>	Brassica napus	
<400>	57	
Met Cys Ser Leu Ala Thr Asn Leu Leu Leu Pro Ser Thr Met Lys Pro		
1	5	10
		15
Ala Phe Thr Glu Lys Gln Asn Thr Asn Ser Leu Phe Leu Thr Asn Lys		
20	25	30
Arg Ser Leu Met Gln Asn Arg Ser Thr Val Pro Val Pro Val Ala Arg		
35	40	45
Leu Leu Glu Pro Ala Ile Phe Glu Ala Ser Lys Leu Lys Val Ser Phe		
50	55	60
Leu Gly Val Asp Glu Lys Lys His Pro Ser Lys Leu Pro Arg Thr Tyr		
65	70	75
		80
Thr Leu Thr His Ser Asp Ile Thr Ala Lys Leu Thr Leu Ala Ile Ser		
85	90	95
Gln Ser Ile Asn Asn Ser Gln Leu Gln Gly Trp Ala Asn Arg Leu Phe		
100	105	110
Arg Asp Glu Val Val Ala Glu Trp Lys Lys Val Lys Gly Lys Met Ser		

## Sequence Listing

---

```

115              120              125
Leu His Val His Cys His Ile Ser Gly Gly His Phe Leu Leu Asp Leu
130              135              140
Ile Ala Lys Leu Arg Tyr Tyr Ile Phe Cys Lys Glu Leu Pro Val Val
145              150              155              160
Leu Lys Ala Phe Val His Gly Asp Gly Asn Leu Leu Asn Ser Tyr Pro
165              170              175
Glu Leu Gln Glu Ser Pro Val Trp Val Tyr Ser Ile Gln Thr Ser Pro
180              185              190
Ser Thr Ile Arg Leu Asn Val Gly Gly Arg Phe Gly Arg Pro Arg Ser
195              200              205
Thr Asn
210

<210>    58
<211>    97
<212>    PRT
<213>    Brassica napus

<400>    58
Met Cys Ser Leu Ser Ala Asn Met Leu Leu Pro Thr Lys Leu Lys Pro
1          5          10          15
Ala Tyr Ser Asp Lys Arg Gly Asn Ser Thr Asn Ser Leu Leu Val Ser
20          25          30
Asn Thr Arg Ser Lys Arg Lys Asn Gln Ser Val Val Pro Met Ala Arg
35          40          45
Leu Phe Gly Pro Ala Ile Phe Glu Ser Ser Lys Leu Lys Val Leu Phe
50          55          60
Leu Gly Val Asp Asp Lys Lys His Pro Pro Thr Leu Pro Arg Thr Tyr

```

## Sequence Listing

---

65		70		75		80									
Thr	Leu	Thr	His	Ser	Asp	Ile	Thr	Ala	Lys	Leu	Thr	Leu	Ala	Ile	Ser
		85							90					95	

His